GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2020-2021
OBJECT ORIENTED PROGRAMMING USING JAVA (Backlog)
CS(IT)504A

TIME ALLOTTED: 3 HOURS **FULL MARKS: 70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any *ten* from the following, choosing the correct alternative of each question: **10×1=10**

		Marks	**CO No**

1. (i) Which is a valid keyword in java?
   - a) interface
   - b) string   **1**   **CO2**
   - c) Float
   - d) unsigned

   (ii) Scanner class resides in
   - a) java.applet
   - b) java.util   **1**   **CO3**
   - c) java.io
   - d) java.net

   (iii) Which one of the following statements is wrong?
   - a) A base class reference can refer to an object of a derived class
   - b) The dynamic method dispatch is not carried out at the run time   **1**   **CO4**
   - c) The super() construct refers to the base class constructor
   - d) The super.base-class-method-name( ) format can be used only within a derived class

   (iv) What is the output of this code fragment?
   int x=3; int y=10;
   System.out.println (y % x);
   - a) 0   **1**   **CO2**
   - b) 1
   - c) 2
   - d) 3

   (v) In which memory a String is stored, when we create a string using new operator?
   - a) Stack
   - b) String memory **1**   **CO3**
   - c) Heap memory
   - d) Random storage space

   (vi)
   What would happen if constructors have return types?
   - a) Compilation error
   - b) Runtime error   **1**   **CO2**
   - c) Successful Compilation and Execution
   - d) Only String return type is allowed

(vii)   JVM is
      a) platform dependent
      b) platform independent   1   CO2
      c) depends on machine architecture only
      d) depends on operating system only

(viii) What is the correct ordering for the import, class and package declarations where found in a single file?
      a) package, import, class
      b) import, package, class   1   CO4
      c) class, import, package
      d) package, class, import

(ix)   Which of the following statements is not correct?
      a) The 'try' block should be followed by a 'catch' block
      b) The 'try' block should be followed by a 'finally' block
      c) The 'try' block should be followed by either a 'catch' block or a 'finally' block   1   CO5
      d) The 'try' block should be followed by at least two 'catch' blocks

(x)   Which one of the following is wrong?
      a) 'Runnable' is a predefined interface
      b) The sleep() method instructs a thread to terminate its execution   1   CO5
      c) The isAlive() method tells whether a thread has not yet died
      d) MAX_PRIORITY represents the level 10

(xi)   Which of the following variable declaration would NOT compile in a java program?
      a) int VAR;
      b) int var1;   1   CO2
      c) int var_1;
      d) int 1_var;

(xii) Order of execution of constructors in Java Inheritance is
      a) Base to derived class
      b) Derived to base class   1   CO4
      c) Random order
      d) None of these

GROUP – B
(Short Answer Type Questions)
Answer any *three* from the following   **3×5=15**

			Marks	CO No
2.	(a)	Why Java is called Architecture neutral language?	4	CO2
	(b)	What is the advantage of 'Byte Code' in Java programming?	1	CO2
3.	(a)	What is the significance of using "this" keyword? Explain with example programs.	2	CO2
	(b)	What is the difference between final and finally keyword in java?	3	CO5
4.	(a)	Explain the terms "class" and "object" w.r.t. Object Oriented Programming using suitable example.	2	CO1
	(b)	Explain the terms: a) Association and b) Aggregation in object oriented programming.	3	CO1
5.	(a)	Why do we use "static" and "public" keywords in the following statement –"public static void main(String args[ ])" ?	3	CO2

			Marks	CO No
	(b)	Describe the usage of Command line argument in a Java program.	2	CO2
6.	(a)	What do you mean by the term "Data hiding" in Java?	1	CO2
	(b)	Explain encapsulation technique with the help of a suitable Java program.	4	CO2

GROUP – C
(Long Answer Type Questions)
Answer any *three* from the following: 3×15=45

			Marks	CO No
7.	(a)	What do you mean by the term Polymorphism? Explain with a suitable example.	2	CO2
	(b)	Describe Static polymorphism or Method Overloading technique with the help of a simple Java program.	7	CO2
	(c)	What is the difference between Method overloading and Constructor overloading in Java?	3	CO2
	(d)	Differentiate "early binding" and "late binding w.r.t. polymorphism technique in java.	3	CO4
8.	(a)	Explain the term "inheritance" with a suitable example in java.	2	CO4
	(b)	Describe different type of inheritance in Java with the help of suitable diagrams.	4	CO4
	(c)	Explain Dynamic Method Dispatch with a suitable Java program.	6	CO4
	(d)	Why Java does not support multiple inheritance? Justify your answer.	3	CO4
9.	(a)	What is package?	2	CO4
	(b)	How can you create your own package in Java and add multiple classes inside that package? Explain with a suitable example program.	5	CO4
	(c)	Describe the accessibility or scope of a) private b) protected c) default and d) public access specifiers w.r.t. java package.	6	CO4
	(d)	How can you import multiple packages in your java program? Explain with a Java program.	2	CO4
10.	(a)	What is Constructor in Java?	2	CO2
	(b)	What is the difference between Method and Constructor?	3	CO2
	(c)	Write a simple java program where you can implement both default and parameterized constructor.	6	CO2
	(d)	What is the difference between equals () and = = in Java? Explain with a small Java program.	2	CO3
	(e)	Explain the functionality of toString () method with a Java program.	2	CO3
11.	(a)	What is data abstraction?	2	CO2
	(b)	What is the difference between abstract class and interface in Java.	4	CO4
	(c)	What do you mean by the term "Thread" in Java?	1	CO5
	(d)	Explain Thread Life-Cycle in Java with a suitable diagram.	8	CO5
	(c)	What is the difference between mutable and immutable strings? Explain with proper examples.	3	CO3